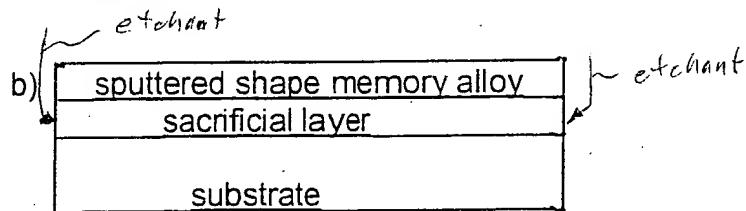


the sacrificial layer as it would seem protected by the substrate and the SMA layer. The explanation is found in the specification where, at page 4, lines 21-23, Applicants disclose:

"In this step a chemical etch solution is applied so that it begins to etch the sacrificial layer from the edges of the sputter deposited film with the etchant slowly proceeding inwardly and underneath the film."

As suggested in the Office Action, step 14 of Fig. 1 does form a "sandwich" with a sacrificial layer between the substrate on bottom and the SMA on top. Then in the next method step 16, taking the Examiner's sandwich illustration (b) from page 2 of the Action, the etchant would work down around the sides of the SMA layer where they would etch beginning at the sides of the sacrificial layer and progress inwardly as shown by the arrows below:



The SMA layer could be patterned with portions of it removed so that multiple edges of the sacrificial layer provide access for the etchant. But in Applicants' method only one small exposed edge would be adequate to allow the etchant to remove enough of the sacrificial layer to free the SMA layer. .

Thus it is respectfully submitted that the specification provides an enabling disclosure of the claimed method.

2) Sections 102(b) and 103(a) Rejections

~~In the Office Action, claims 8 and 9 were rejected under §102(b) as anticipated by JP 07-90624 or 10-173306, or in the alternative, under §103(a) as obvious over Rasmussen or Bose.~~ For the following reasons it is respectfully submitted that the references do not anticipate the steps set forth in Applicants' claims.

It is well settled that the standard for anticipation under §102(b) is that of strict

identity in that it must be shown that a single prior art source teaches all of the essential elements of the claim in question. Hybritech, Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 231 USPQ 81, 90 (Fed. Cir. 1986).

As to the 103(a) rejections, it is well settled that obviousness cannot be established merely by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination. In re Geiger, 815 F.2d 686, 688, 2 USPQ 2d 1276, 1278 (Fed. Cir. 1987).

The rejected claims 8 and 9 are product by process claims, and in the Office Action it is noted that the prior art does not disclose Applicants' claimed process steps. The Action suggests that because the prior art allegedly discloses a product substantially the same as that being claimed, then the burden falls on Applicants to show that the process steps result in a product materially different from that disclosed in the prior art. That is just the case here, as appears from the following.

- Rasmussen discloses separating thin film SMA layer from a substrate, but the patent specifically says that the separation is by "mechanically delamination" which is to "evaluate its mechanical and shape-memory properties" (col. 4, lines 2-4).¹ Such mechanical delamination would simply be done by pulling the SMA layer away from the substrate. The pulling of such a large area of film free would induce too much strain such that the resulting over-strained film would be unsatisfactory for subsequent use in practical applications. Thus products made by the Rasmussen process would be quite different from products made by Applicants' claim 8 and 9 processes.

- Bose also discloses, as noted by the Examiner, free standing thin film SMA. But nowhere in Bose is there any explanation as to how the thin film is released from a substrate. Thus, at Col. 4, lines 22-25, the disclosure says only that the material "when released from its substrate" exhibits shape recovery characteristics.

¹ Col. 4, lines 37-39, also says that a "freestanding film" was "needed for mechanical and shape-memory properties evaluation."

Since Rasmussen is the only prior art disclosing how SMA film is "delaminated." then it must be presumed that Bose uses a similar prior art mechanical delamination process, and with the same resulting unsatisfactory over-strained characteristics. Thus the Bose product would also be quite different from products made by Applicants' claimed processes.

- Sakamoto JP 07-90624 This reference discloses dissolving the entire substrate in acid. The Sakamoto process thus cannot be carried out after crystallization at the required 500°C because interdiffusion of the TiNi and copper would destroy the product's shape memory properties. Thus products made by the Sakamoto process would be quite different from that made by Applicants' claimed processes.
- Ota JP 10-173306 This reference discloses only partial removal of film from the substrate (Abstract: ... "etching a part of an insulating film on the back of the substrate") and (Solution: ... "a part of a mask 6 is removed to expose the silicon substrate 2"). See also Figs. 1 (a) - (c) and 2 (a) - (e) which show that the SMA film 8 remains attached at one end to the substrate 2. Thus an Ota product would not be free standing, as would Applicants' products made by the processes of Claims 8 and 9.

Accordingly, in view of the foregoing it is respectfully submitted that the claims under consideration present patentable subject matter, and allowance thereof is requested. Should the Examiner have any questions, a telephone call at 415-979-9876 to Applicant's attorney is invited.

Respectfully submitted,

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